

AMENDMENTS TO THE CLAIMS

This Listing of Claims will replace all prior versions, and listing, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (original) A current sense apparatus comprising:
an output stage connected between a high voltage and a low voltage
for producing a phase output current, a mirror current
proportional to the phase output current, and a sense voltage; and
a servo amplifier for converting the mirror current to a current sense
signal.

Claim 2 (original) The apparatus of claim 1, wherein the output stage
comprises:

a phase output node;
a common drain DMOSFET connected between the high voltage and
phase output node; and
a MOSFET connected between the low voltage and phase output
node.

Claim 3 (original) The apparatus of claim 2, wherein the common drain DMOSFET has a gate, a drain connected to the high voltage, a source connected to the phase output node, a current mirror terminal for providing the mirror current, and a sense terminal for providing the sense voltage.

Claim 4 (original) The apparatus of claim 1, wherein the output stage comprises:

- a phase output node;
- a MOSFET connected between the high voltage and phase output node; and
- a common drain DMOSFET connected between the low voltage and phase output node.

Claim 5 (original) The apparatus of claim 4, wherein the common drain DMOSFET has a gate, a drain connected to the phase output node, a source connected to the low voltage, a current mirror terminal for providing the mirror current, and a sense terminal for providing the sense voltage.

Claim 6 (original) The apparatus of claim 1, wherein the servo amplifier comprises:

an operational amplifier having an inverting input connected with the mirror current, a non-inverting input connected with the sense voltage, and an output; and
a MOSFET having a source connected with the inverting input of the operational amplifier, a gate connected with the output of the operational amplifier, and a drain for providing the current sense signal.

Claims 7-15 (canceled).

Claim 16 (original) A current sense method comprising the steps of:
producing a phase output current;
mirroring the phase output current for producing a mirror current proportional to the phase output current; and
converting the mirror current to a current sense signal.

Claim 17 (original) The method of claim 16, further comprising the steps of:

connecting a common drain DMOSFET and a MOSFET in series between a high voltage and a low voltage with a phase voltage

output node between the common drain DMOSFET and MOSFET; and
producing the phase output current by switching the common drain DMOSFET and MOSFET.

Claim 18 (original) The method of claim 17, further comprising providing the mirror current and a sense voltage by the common drain DMOSFET.

Claim 19 (original) The method of claim 18, wherein the step of converting the mirror current to the current sense signal comprises the steps of:
connecting the mirror current and sense voltage to an operational amplifier; and
driving a second MOSFET by the operational amplifier for producing the current sense signal.